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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,626	07/05/2000	ANDREAS MAIER	00114	2631
23338	7590	04/06/2004	EXAMINER	
DENNISON, SCHULTZ, DOUGHERTY & MACDONALD 1727 KING STREET SUITE 105 ALEXANDRIA, VA 22314			TSAI, HENRY	
			ART UNIT	PAPER NUMBER
			2183	17

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/582,626

Applicant(s)

MAIER ET AL.

Examiner

Henry W.H. Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/9/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Objections

1. Claims 21, 22, and 40 objected to because of the following informalities:

In claim 21, line 1, "the basic body" was not defined previously. It is suggested to change "the basic body" to -the body-; and

In claim 40, line 2, "the basic body" was not defined previously. It is suggested to change "the basic body" to -the body-.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 21, 22, 33, 35, and 37-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 21, line 2, "the rotational axis" lacks proper antecedent basis since it was not defined previously.

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Regarding claim 33, lines 1-2, the phrase "and/or" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In claim 35, line 1, "the inclination"; and line 2, "the long limb" lack proper antecedent basis since they were not defined previously.

In claim 37, lines 4-5, "the inclined surface" lacks proper antecedent basis since it was not defined previously.

In claim 39, line 1, "the adjusting element" lacks proper antecedent basis since it was not defined previously.

Applicant is required to review the claims and correct all language which does not comply with 35 U.S.C. § 112, second paragraph.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 18, 20, 23-27, 32, 34-36 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Kieninger (USP 4,627,771) (Kieninger'771).

Referring to claim 18, Kieninger'771 also discloses, as claimed, a milling head having a body (1, see Fig. 2) and cutting inserts (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) which can be adjusted in recesses (32, see Fig. 1), a clamping element (52, 53, see Figs. 2 and 9, and Col. 5, lines 52-62) disposed in a recess (50, see Fig. 2 and Fig. 9) for clamping purposes, wherein the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is positioned in a receiving part (32, see Fig. 1), and is fixed in its position by means of the clamping element (52, 53, see Figs. 2 and 9, and Col. 5, lines 52-62), characterised in that the clamping element is wedge shaped (the narrowed portion contact the surface of insert 36, see Fig. 9) having a receiving part (the surface of inert 36, see Fig. 9) and is received in its receiving part in a positive-fitting manner (Note the positive-fitting manner occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2).

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Referring to claim 20, Kieninger'771 also discloses: the cutting insert can be adjusted by means of a wedge or screw (56, or 24, 25, see Fig. 2 and Col. 6, lines 62-68).

Referring to claim 23, Kieninger'771 also discloses: a receiving part (50, see Fig. 4) for the clamping element (52 or 53, see Fig. 4) is provided and the clamping element is disposed in a displaceable manner in said receiving part.

Referring to claim 24, Kieninger'771 also discloses: the receiving part (50, see Fig. 4) for the clamping element (52 or 53, see Fig. 4) crosses the receiving part (32, see Fig. 1) of the cutting insert (comprising 6, 4, and 36, see Fig. 4).

Referring to claim 25, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is provided with an inclination (46, see Fig. 4) on the side engaging with the clamping element (note the element 49 as shown in Fig. 4 is best reasonably and broadly interpreted as a clamping element since it also contributes the clamping force applied to the cutting insert).

Referring to claim 26, Kieninger'771 also discloses: the inclination (46, see Fig. 4) being formed at an angle of about 10°.

Referring to claim 27, Kieninger'771 also discloses: the clamping element (52 or 53 see Fig. 9) is provided with an inclination (the portion contacting the insert 36, see Fig. 9) on the side engaging with the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4).

Referring to claim 32, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36, see Fig. 4) comprises a turning plate (6, see Fig. 2) which is screwed to a carrier.

Referring to claim 34, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36, see Fig. 4) is L-shaped, wherein the cutter (6, see Fig. 2) is located in the front region of the short limb (4, see Fig. 2).

Referring to claim 35, Kieninger'771 also discloses: the inclination (46, see Fig. 4) is located on the long limb (36, see Fig. 4).

Referring to claim 36, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) comprising a rotatable cutting plate carrier (11, see Fig. 2) which supports the cutter (6, see Fig. 2).

Referring to claim 39, Kieninger'771's adjusting element (56, or 24, 25, see Fig. 2 and Col. 6, lines 62-68) is best

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reasonably and broadly interpreted as a conical screw since the front end thereof having a conical shape as shown in Fig. 2.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Kieninger (USP 4,964,763) (Kieninger'763).

Kieninger'771 discloses the claimed invention except for: the cutting insert being positioned in an eccentric bushing which is mounted in a positive-fitting manner.

Kieninger disclose a cutting tool comprising the cutting insert (8, see Fig. 2) being positioned in an eccentric bushing (17, see Fig. 4, and Col. 5, line 27) which is mounted in a positive-fitting manner.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise the cutting insert being positioned in an eccentric bushing which is mounted in a positive-fitting manner, as taught by Kieninger'763, in order to facilitate the radial adjustment for the Kieninger'771's cutter.

7. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771.

Kieninger'771 discloses the claimed invention except for: the angle of the inclination of the clamping element being smaller than the angle of the inclination of the cutting insert (claim 28); the difference in the inclination angles being about 2° (claim 29); and a differential screw being provided for the purpose of adjusting the cutting insert

However, it is old and well known in the art to use the angle of the inclination of the clamping element is smaller than the angle of the inclination of the object to be clamped such as a cutting insert as claimed in order to facilitate inserting the clamping element thereinto.

Further, Kieninger'771 also discloses: a screw (56, or 24, 25, see Fig. 2 and Col. 6, lines 62-68) is provided for the purpose of adjusting the cutting insert (comprising 6, 4, and 36,

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see Fig. 4). Using a differential screw for adjusting a cutting insert is old and well know in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise the angle of the inclination of the clamping element being smaller than the angle of the inclination of the cutting insert in order to facilitate inserting the clamping element; and the difference in the inclination angles being about 2° is just an alternate arrangement of the angles of the inclination of a clamping mechanism.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise a differential screw being provided for the purpose of adjusting the cutting insert since it is just an alternative screw comparing with that used in the Kieninger'771's device.

8. Claims 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Gupta (USP 5,934,842).

Kieninger'771 discloses the claimed invention except for: the cutting insert comprising a cutter which is soldered on to a

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carrier (claim 31); and the cutter and/or turning plate consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film (claim 33).

Gupta disclose a milling cutter comprising the cutting insert (21, see Fig. 3) comprising a cutter (36, see Fig. 3, and Col. 4, lines 43-46) which is soldered on to a carrier (31, see Fig. 3); and the cutter and/or turning plate (36, see Fig. 3) consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film (37, see Fig. 3, and Col. 4, lines 43-46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's machine to comprise the cutting insert comprising a cutter which is soldered on to a carrier; and the cutter and/or turning plate consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film, as taught by Gupta, in order to increase the securing strength between the cutter and the carrier of the Kieninger'771's tool, and to increase the cutting life of the Kieninger'771's cutter.

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9. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Allemann (USP 4,929,131).

Kieninger'771 discloses the claimed invention except for: a cooling arrangement being provided in the basic body.

Allemann discloses a machine tool comprising a cooling (42, see Fig. 3, and Col. 3, lines 31-35) arrangement being provided in the basic body.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's tool to comprise a cooling arrangement being provided in the basic body, as taught by Allemann, in order to facilitate cooling the Kieninger'771's cutter for it's longer cutting life.

Allowable Subject Matter

10. Claims 21, 22, 37 and 38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Response to Amendment

11. Applicant's arguments filed 2/9/04 have been fully considered but they are not deemed to be persuasive.

Regarding the 35 U.S.C. §112, second paragraph problems, Applicant's response has not completely overcome these objections and rejections.

Applicants argue that the cylindrical support member 36 does not have a recess, and again, if the screw 43 breaks, the parts fall apart (page 8, lines 9-10). Examiner disagrees with Applicants. There exists a recess (including 46, see Fig. 4) for passing screw 49 into the in support member 36 in the Kieninger'771's tool as shown in Fig. 4.

Regarding the positive fit argument (page 8, line 14), as set forth above in the art rejection, Kieninger'771 tool comprises the positive-fitting manner which occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2.

Applicants also argue that reference numeral 46 defines an indentation and not an inclination (page 8, line 19). Examiner disagrees with Applicants. As shown in Fig. 4, element 46 can be interpreted as having inclination since it comprises an inclined surface clearly shown in the figure.

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Applicants also argue that the set screw 49 is not a clamping element (page 8, line 20). Examiner disagrees with Applicants. As set forth in the art rejection above, the element 49 as shown in Fig. 4 is best reasonably and broadly interpreted as a clamping element since it also contributes the clamping force applied to the cutting insert.

Applicants also argue that with respect to claim 26, which requires an inclination of 10 degrees that the angle which the Examiner is referring to in FIG. 4 is distinctly greater than 10 degrees (page 8 last line to page 9, lines 1-2). Examiner disagrees with Applicants. As set forth in the art rejection above, Kieninger'771 also discloses: the inclination (46, see Fig. 4) being formed at an angle of about 10°.

Applicants also argue that with respect to claim 27, neither references teaches or suggests an inclination, as best seen from FIGS. 4 and 9. FIG. 4 shows that the adjustment is made against the force of the spring stack 45. The portion contacting the insert is the only engagement point of the screw but not inclination (page 9, lines 3-6). Examiner disagrees with Applicants. As set forth above, referring to claim 27, Kieninger'771 also discloses: the clamping element (52 or 53 see Fig. 9) is provided with an inclination (the portion contacting the insert 36, see Fig. 9) on the side engaging with the cutting

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insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4).

Applicants also argue that with respect to claim 28 (page 9, lines 7-11), however, it is old and well known in the art to use the angle of the inclination of the clamping element is smaller than the angle of the inclination of the object to be clamped such as a cutting insert as claimed in order to facilitate inserting the clamping element thereinto.

Applicants argue that with respect to claim 30, the screw 51 of the Kieninger is not a differential screw (page 9, line 12). Examiner realizes the structure. The argument is moot since a differential screw is just an alternative screw comparing with that used in the Kieninger'771's tool as set forth in the art rejection above.

Applicants argue that with respect to claim 39, the screws 56, 24, and 25 are not conical screws. However, as set forth in the art rejections, Kieninger'771's adjusting element (56, or 24, 25, see Fig. 2 and Col. 6, lines 62-68) is best reasonably and broadly interpreted as a conical screw since the front end thereof having a conical shape as shown in Fig. 2.

Applicants argue that with respect to claims 31 and 33. Gupta discloses a monobloc hub structure and not a turning plate as required by the claimed limitation (page 10, lines 3-4).).

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Examiner disagrees with Applicants. As set forth in the art rejection, Gupta disclose, as claimed, a milling cutter comprising the cutting insert (21, see Fig. 3) comprising a cutter (36, see Fig. 3, and Col. 4, lines 43-46) which is soldered on to a carrier (31, see Fig. 3); and the cutter and/or turning plate (36, see Fig. 3) consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film (37, see Fig. 3, and Col. 4, lines 43-46). Kieninger'771 in view of Gupta discloses the claimed invention.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (703) 308-7600. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (703) 305-9712. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 receptionist whose telephone number is (703) 305-3900.

14. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into

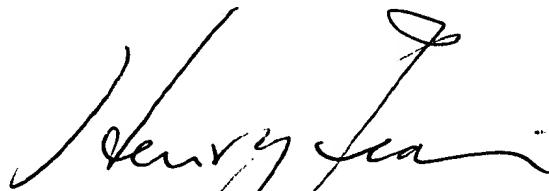
the Group at fax number: 703-872-9306.

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This practice may be used for filing papers not requiring a fee.

It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account.

Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.

A handwritten signature in black ink, appearing to read "Henry Tsai", with a stylized flourish at the end.

HENRY W. H. TSAI
PRIMARY EXAMINER

April 4, 2004